

SAT Report
PMN Number: **T-13-0091**
SAT Date: **9/6/2013**
Print Date: **8/29/2014**

Related cases:

CBI: Yes

Health related cases:

Ecotox related cases: No reasonable analogs were found.

Concern levels:

| | | | |
|--------------------------|----------------------|-------------------|------------------------|
| Type of Concern: | <u>Health</u> | <u>Eco</u> | <u>Comments</u> |
| Level of Concern: | 2 | 3 | |

| | | | |
|---------------------------|------------------------|------------------------|------------------------|
| <u>Persistence</u> | <u>Bioaccum</u> | <u>Toxicity</u> | <u>Comments</u> |
| 2 | 1 | 2 | |
| | | Awaiting | |
| | | Human Health | |
| | | Entry | |
| | | Awaiting | |
| | | Human Health | |
| | | Entry | |
| | | Awaiting | |
| | | Human Health | |
| | | Entry | |

Exposure Based Review:

Health: Yes

Ecotox: Yes

Routes of exposure:

Health: Drinking Water Inhalation

Ecotox: All releases to water

Fate: ;

Keywords:

Keywords:

Summary of Assessment:

Fate:

Fate Summary: T-13-0091

FATE: Estimations for typical

Solid with MP = 97 C (E)

log Kow = -3.86 (E)

S = 15 g/L at 25 C (M for mixture)

VP < 1.0E-6 torr at 25 C (E)
 BP > 400 C (E)
 H < 1.00E-8 (E)
 log Koc = 3.91 (E)
 log Fish BCF = 0.50 (E)
 log Fish BAF = -0.05 (E)
 POTW removal (%) = 0-50 via sorption
 Time for complete ultimate aerobic biodeg = wk-mo
 Sorption to soils/sediments = strong
 PBT Potential: P2B1
 *CEB FATE: Migration to ground water = slow

Health:

Health Summary: Absorption is nil through the skin, moderate through the GI tract, and good through the lung, based on physical/chemical properties. There is concern for irritation/possible corrosion to the eye, skin, and lung, based on excess [REDACTED] in the PMN formulation. There is also concern for liver, kidney and developmental toxicities, based on [REDACTED], as well as concern for developmental toxicity based on small [REDACTED]. There are also concerns for dermal sensitization and endocrine disruption based on [REDACTED].

Ecotox:

| Test Organism | Test Type | Test End Point | Predicted | Measured | Comments |
|---------------|-----------|----------------|-----------|----------|----------|
| fish | 96-h | LC50 | 3.0 | | |
| daphnid | 48-h | LC50 | 0.3 | | |
| green algal | 96-h | EC50 | 0.651 | | |
| fish | — | chronic value | 0.3 | | |
| daphnid | — | chronic value | 0.03 | | |
| algal | — | chronic value | 0.171 | | |
| Sewage Sludge | 3-h | EC50 | — | | |
| Sewage Sludge | — | Chronic Value | — | | |

Ecotox Values Comments:

| Factors | Values | Comments |
|--------------------------------|------------|----------|
| Assessment Factor | 10 | |
| Concentration of Concern (ppb) | 3 | |
| SARs | [REDACTED] | |
| SAR Class | [REDACTED] | |

| | |
|-----------------|--|
| Ecotox Category | |
|-----------------|--|

Ecotox Factors Comments:

SAT Chair: J. Kwiat

Focus Report
New Chemicals Program
PMN Number: T-13-0091

Focus Date: 09/11/2013 11:00:00 PM Report Status: Completed
Consolidated Set:
Focus Chair: Geraldine Hilton Contractor: Olga Svetlitskaya

I. Notice Information

Submitter: Shrieve Chemical Products

CAS Number:

Chemical Name:

Use:

Other Uses:

PV-Max:

Manufacture:

X

Import:

II. SAT Results

(1) Health Rating: 2

Eco Rating: 3

Comments: ;

Occupational: 1D

Non-Occupational: 3

Environmental: 3

(1) PBT: 2 1

2

Comments:

III. OTHER FACTORS

Categories:

Health Chemical Category:

Ecotox Category:

Related Cases/Regulatory History:

Health related Cases:

Ecotox Related Cases: No reasonable analogs were found.

Regulatory History: No reasonable analogs were found.

MSDS/Label Information:

MSDS: No

Label: No

Exposure Based Information:

Exposure Based Review: Y

Exposure Based Review (Health): Y

Exposure Based Review (Eco): Y

Exposure Based (Occupational): No

Exposure Based Review (Non Occupational): N

Exposure Based (Environmental): Y

| Exposure Parameter | Exposure-Based | Persistent/Bioaccum | Exposure Value |
|--------------------|----------------|---------------------|----------------|
| Surface DW: | Yes | Yes | |
| Fish Ingestion: | | | |
| Ground DW: | Yes | | 0.11 |
| Inhalation: | Yes | | 0.0566 |
| Water Releases: | Yes | | 0.0735 |
| Total Releases: | Yes | | 465538 |
| Consumer Exposure: | Yes | | 3213773 |

IV. Summary of SAT Assessment

Fate:

Fate Summary:

T-13-0091

FATE: Estimations for typical [REDACTED]

Solid with MP = 97 C (E)

log Kow = -3.86 (E)

S = 15 g/L at 25 C (M for mixture)

VP < 1.0E-6 torr at 25 C (E)

BP > 400 C (E)

H < 1.00E-8 (E)

log Koc = 3.91 (E)

log Fish BCF = 0.50 (E)

log Fish BAF = -0.05 (E)

POTW removal (%) = 0-50 via sorption

Time for complete ultimate aerobic biodeg = wk-mo

Sorption to soils/sediments = strong

PBT Potential: P2B1

*CEB FATE: Migration to ground water = slow

Health:

Health Summary:

Absorption is nil through the skin, moderate through the GI tract, and good through the lung, based on physical/chemical properties. There is concern for irritation/possible corrosion to the eye, skin, and lung, based on excess [REDACTED] in the PMN formulation. There is also concern for liver, kidney and developmental toxicities, based on [REDACTED], as well as concern for developmental toxicity based on small [REDACTED]. There are also concerns for dermal sensitization and endocrine disruption based on [REDACTED].

Ecotox:

Ecotox Values:

Fish 96-h LC50: 3.0(P)

Daphnid 48-h LC50: 0.3(P)

Green algal 96-h EC50: 0.651(P)

Fish Chronic Value: 0.3(P)

Daphnid ChV: 0.03(P)

Algal ChV: 0.171(P)

Ecotox values comments:

Predictions are based on SAR nearest analog method for [REDACTED] and SAR predictions for [REDACTED]; SAR chemical class = [REDACTED]; MW 208; solid with unknown mp (P); S = 15,000 mg/L at 25 C (P); pH7; effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L;

Ecotox Factors:

Assessment Factor: 10

Concern Concentration: 3

V. Summary of Exposures/Releases

Engineering Summary: T-13-0091

| Exposures/Releases | Release | Release | Release |
|--------------------------|--|---|--|
| Scenario | Manufacturing: Batch | Processing: Formulation of Clay/Shale Inhibitor | Processing: Formulation of Clay/Shale Inhibitor |
| Sites | | | |
| Media | Water or Incineration or Landfill | Water or Incineration or Landfill | Water or Incineration or Landfill |
| Descriptor A | Conservative | High End | Conservative |
| Quantity A (kg/site/day) | 2.0E+2 | 6.5E+2 | 2.2E+2 |
| Frequency A (day/year) | | | |
| Descriptor B | | | |
| Quantity B (kg/site/day) | | | |
| Frequency B (day/year) | | | |
| From | Equipment Cleaning Losses of Liquids from a Single, Large Vessel | Cleaning Liquid Residuals from Drums Used to Transport the Raw Material | Equipment Cleaning Losses of Liquids from a Single, Large Vessel |
| Workers | | | |
| Exposure Type | | | |

| Engineering Summary: Exposures/Releases | Release | Release | Release |
|---|---|--|---------------------------|
| Scenario | Use: Clay/Shale Inhibitor | Use: Clay/Shale Inhibitor | Use: Clay/Shale Inhibitor |
| Sites | 337 | 337 | 337 |
| Media | Water or Incineration or Landfill | Water or Landfill | Deepwell Injection |
| Descriptor A | High End | Output 2 | Output 2 |
| Quantity A (kg/site/day) | 1.4E+0 | 2.0E-2 | 8.1E+0 |
| Frequency A (day/year) | 350 | 350 | 350 |
| Descriptor B | | | |
| Quantity B (kg/site/day) | | | |
| Frequency B (day/year) | | | |
| From | Cleaning Liquid Residuals from Drums Used to Transport the Raw Material | Equipment Cleaning Losses of Liquids from a Single, Large Vessel | Oil/Water Separation |
| Workers | | | |
| Exposure Type | | | |

V. Summary of Exposures/Releases

Engineering Summary: T-13-0091

| Exposures/Releases | Release | Release | Release |
|--------------------------|---------------------------|---------------------------|---------------------------|
| Scenario | Use: Clay/Shale Inhibitor | Use: Clay/Shale Inhibitor | Use: Clay/Shale Inhibitor |
| Sites | 337 | 337 | 337 |
| Media | Water | Landfill | Incineration |
| Descriptor A | Output 2 | Output 2 | Output 2 |
| Quantity A (kg/site/day) | 2.2E-1 | 1.3E+0 | 2.2E+1 |
| Frequency A (day/year) | 350 | 350 | 350 |
| Descriptor B | | | |
| Quantity B (kg/site/day) | | | |
| Frequency B (day/year) | | | |
| From | Oil/Water Separation | Oil/Water Separation | Oil/Water Separation |
| Workers | | | |
| Exposure Type | | | |

| Engineering Summary: Exposures/Releases | Exposure | Exposure | Exposure |
|--|--------------------------------------|--|---|
| Scenario | Manufacturing: Batch | Processing: Formulation of Clay/Shale Inhibitor | Use: Clay/Shale Inhibitor |
| Sites | | | 337 |
| Media | Dermal | Dermal | Dermal |
| Descriptor A | High End | High End | High End |
| Quantity A (kg/site/day) | 4.9E+2 | 4.9E+2 | 1.2E+1 |
| Frequency A (day/year) | | | 250 |
| Descriptor B | | | |
| Quantity B (kg/site/day) | | | |
| Frequency B (day/year) | | | |
| From | Loading Liquid Product into Drums | Unloading Liquid Raw Material from Drums | Unloading Liquid Raw Material from Drums |
| Workers | 3 | 3 | 2696 |
| Exposure Type | Liquid | Liquid | Liquid |

V. Summary of Exposures/Releases

Engineering Summary:

| | | | |
|---------------------------|--|--|--|
| Exposures/Releases | | | |
| Scenario | | | |
| Sites | | | |
| Media | | | |
| Descriptor A | | | |
| Quantity A (kg/site/day) | | | |
| Frequency A (day/year) | | | |
| Descriptor B | | | |
| Quantity B (kg/site/day) | | | |
| Frequency B (day/year) | | | |
| From | | | |
| Workers | | | |
| Exposure Type | | | |

VI. Focus Decision and Rationale

Regulatory Actions

Regulatory Decision: TME Denial

Decision Date: 09/11/2013

Type of Decision:

Rationale:

T-13-0091 was denied due to acute and chronic ecotoxicity risks. Human health hazard concerns were moderate for inhalation exposures. The submitter is recommended to submit an MSDS, which includes impervious gloves and sensitization warnings. Ecotoxicity hazard concerns were high based on SAR nearest analog predictions for [REDACTED]. Chronic risks to the environment were high due to releases to water where the chronic COC of 3 ppb was exceeded 250 [REDACTED] days (SWC: 198,000 ppb) during manufacturing/production operations and 348/350 days (SWC: 1,547.17 ppb) during use operations. Acute risks to the environment were high due to releases to water where the SWCs of 198,000 ppb and 37,000 ppb during manufacturing/processing operations and 1,547.17 ppb during use operations exceeded the acute COC of 60 ppb. The following CEB exposure-based criteria were met: # of workers exposed: [REDACTED] >1000 and Routine Dermal Cont: >250 workers & >100 days/yr. The following EAB exposure-based criteria were met: Drinking (Surface) Water Dose (1.10E-01 mg/kg/day), Inhalation Dose (7.35E-02 mg/kg/day), Groundwater Dose (5.66E-02 mg/kg/day), Surface Water Release After Treatment (4.66E+05 kg/yr) and Total Release After Treatment (3.21E+06 kg/yr).

COC: Chronic – 3 ppb, Acute – 60 ppb

Summary of Exposures and Releases

Manu

[REDACTED], 3 workers

Inhalation: Negligible (VP < 0.001 torr)

Dermal: 4.9E+2 mg/day (28% Liquid)

Releases to Water: 2.0E+2 kg/site day over [REDACTED]

Or Incineration or Landfill

Proc

[REDACTED], 3 workers

Inhalation: Negligible (VP < 0.001 torr)

Dermal: 4.9E+2 mg/day (28% Liquid)

Releases to Water: 6.5E+2 kg/site day over [REDACTED]

Or Incineration or Landfill

Releases to Water: 2.2E+2 kg/site day over [REDACTED]

Or Incineration or Landfill

MFG+PROC

Fate Releases to Water (Removal Rate 0%):

SWC: 198,000 ppb

DW: LADD: 0.11 mg/kg/day; ADR: 9.53 mg/kg/day

FI: LADD: 1.53E-03 mg/kg/day; ADR: 0.12 mg/kg/day

>COC (3 ppb) 250/250 days/yr

MFG+PROC PMD2

Fate Releases to Water (Removal Rate 0%):

SWC: 3.70E+04 ppb

DW: LADD: 2.31E-02 mg/kg/day; ADR: 1.78 mg/kg/day
FI: LADD: 3.12E-04 mg/kg/day; ADR: 2.25E-02 mg/kg/day

MFG+USE

Fate Releases to Landfill: 5.66E-02 mg/kg/day

MFG+USE

Fate Releases to Air

Stack Air: LADD: 7.35E-02 mg/kg/day, ADR: 1.33E+00 mg/kg/day

Use

337 sites, 350 days/yr, 2,696 workers

Inhalation: Negligible (VP < 0.001 torr)

Dermal: 1.2E+1 mg/day (0.7% Liquid)

Releases to Water: 2.2E 1 kg/site day over 350 days/yr

Releases to Water: 1.4E+0 kg/site day over 350 days/yr

Or Incineration or Landfill

Releases to Water: 2.0E 2 kg/site day over 350 days/yr

Or Landfill

Releases via Incineration: 2.2E+1 kg/site day over 350 days/yr

Releases via Landfill: 1.3E+0 kg/site day over 350 days/yr

Releases to Deepwell Injection: 8.1E+0 kg/site day over 350 days/yr

Fate Releases to Water (Removal Rate 0%):

SWC: 1547.17 ppb

DW: LADD: 1.10E-03 mg/kg/day; ADR: 7.06E-02 mg/kg/day

FI: LADD: 1.50E-05 mg/kg/day; ADR: 8.38E-04 mg/kg/day

>COC (3 ppb) 348/350 days/yr

Fate Releases to Landfill: 1.98E-04 mg/kg/day

Fate Releases to Air

Stack Air: LADD: 2.22E-03 mg/kg/day

P2 Rec Comments:

Testing:

Final Recommended:

Health:

Eco:

Fate:

Other: